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ABSTRACT

This study was undertaken to determine whether normal children's descriptions, explanations, and ideas about the treatment and prognosis of learning disabilities change with age. Participating were 120 middle-class children of average intelligence, equally representing both sexes, and each age from 7 through 12 years. Subjects, individually interviewed, completed an open-ended questionnaire. For each dimension (i.e., descriptions, explanations, treatment, and prognosis) children's responses were scored according to a category system of hierarchically ordered levels of reasoning. Results indicated that age-related changes characterize each dimension. With increasing age, children's descriptions and explanations, as well as their ideas about the treatment and prognosis of learning disability, change from being undifferentiated, incomplete, and inaccurate to being more differentiated, complete, and accurate. (MP)

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A Developmental Analysis of Children's Conceptions of Learning Disability

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A Developmental Analysis
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Abstract

This study attempted to determine whether normal children's descriptions, explanations, and ideas about the treatment or prognosis of learning disability change with age. One hundred twenty middle class children of average intelligence, equally representing ages 7, 8, 9, 10, 11 and 12 years and both sexes, were interviewed individually, using an open-ended questionnaire. For each dimension, responses were scored according to a category system of hierarchically ordered levels. ANOVAs revealed significant age changes characterize each dimension. Scalogram analyses yielded an Index of Reproducibility of .99 for each variable, indicating that observed changes are hierarchically ordered. Partial correlational analyses revealed significant relationships among all four dimensions.

Introduction

In recent years, the development of children's understanding of health-related concepts, including those pertaining to psychological disorders has attracted the attention of researchers (Bibace & Walsh, 1980; Maas, Marecek & Travers, 1978). Children's concepts of mental retardation were examined by Budoff, Siperstein, and Conant (1979) but so far, there have been no scientific investigations of children's understanding of learning disabilities (LD). Given the high incidence of children diagnosed as LD, it is surprising that no one has attempted to document the developmental progression of children's understanding of learning disability. This is important since there is some evidence that children with learning problems who receive and are informed about a diagnosis of learning disability may show a more positive self-evaluation than those who are similarly diagnosed but not informed (Rosenthal, 1973). Other studies have documented that peer understanding on the meaning of a diagnostic label results in less rejection of the handicapped child (Froug & Jones, Note 1; Goodman, Gottlieb & Harrison, 1972).

The present study was undertaken to determine whether there are age-related changes in children's conceptions of learning disabilities. NonLD children were studied since the intent was to collect normative data. Since the incidence of LD is higher in males, sex differences in children's understanding of learning disability were also examined. Both the conceptual framework and the methodology were derived from previous research on the development of social cognition (Shantz, in press) undertaken from an organismic world view (Piaget, 1965; Werner, 1948).

Methodology

Insert Table 1 here

The sample consisted of 120 middle class children randomly recruited from a large metropolitan district in a midwestern state. They represented six age groups (7, 8, 9, 10, 11 and 12 years). Each age group had 10 males and 10 females. Since there was no hypothesis regarding race, no attempt was made to balance the design for race. Random recruitment resulted in a final sample which included a proportional representation of Caucasians to nonCaucasians which paralleled the actual proportions within the school district. All children were in a regular class. None had ever been diagnosed as LD but they attended schools which also had a special class for LD children. Lastly, all children had "average" intelligence as defined by standard scores of 80 to 120 on the California Test of Mental Maturity.

Children's conceptions of learning disability were elicited through an open-ended questionnaire designed to reveal the child's understanding through his or her description, explanation of origin, and ideas about treatment or prognosis. There were two warm-up questions to establish rapport and task familiarity, fourteen questions concerning learning disability, some additional questions to be used only if further probes were necessary, and three forced-choice questions regarding service preference. Results from the last set of questions will not be reported here. Copies of the questionnaire and the scoring criteria may be obtained from the authors.

Each child was interviewed individually at his or her own school. While the series of questions used in each interview were essentially

uniform across subjects, the use of Piaget's (1965) clinical method permitted further probing when the level of the child's reasoning seemed unclear. Interviews lasted from ten to twenty minutes. Responses were written down during the session but the interview was also recorded on audiotape so that the written protocol could be checked for accuracy and completeness. Each protocol was assigned a code number. Thus, raters remained unaware of the respondent's age, sex, and race.

Descriptions, explanations and ideas about treatment or prognosis were scored according to scoring category systems based on the results of a prior pilot study. For each of these four dimensions of the construct, learning disability, the category system consists of hierarchically ordered levels of reasoning about the dimension. For example, descriptions range from Level 0 where there is not even a rudimentary comprehension of learning disability to Level IV where learning disability is defined as a condition characterized by the presence of both academic problems and psychological process impairment in an individual who possesses at least average intelligence and who is neither mentally retarded, emotionally disturbed nor sensory impaired.

Interrater reliability was established by having two trained raters independently score 25% of the protocols at each age group. The percentage of agreement between the two raters was 94% for Description, 93% for Explanation, 97% for Treatment, and 97% for Prognosis ratings.

For purposes of data analysis, each level or sublevel was assigned a numerical score. For example, the scores for the dependent variable of Description ranged from 0 (Level 0) to 9 (Level IV, sublevel C).

To examine age-related changes, the scores for each of the four dependent variables (Description, Explanation, Treatment, Prognosis) were analyzed separately in a 6 x 2 x 2 (age x sex x race) ANOVA, using a computer program from the Statistical Analysis System (SAS) which included a General Linear Models (GLM) regression procedure to handle the imbalance in the design due to race. Either Tukey's HSD test for equal n situations or Scheffe's test for unequal n situations were used when appropriate for post hoc multiple mean comparisons, at an alpha level of .05.

In addition, a formal analysis of the ordering of levels within each category system was undertaken, using a scaling procedure devised by Leik and Matthews (1968). This particular method of doing a scalogram analysis is especially appropriate when earlier patterns of responding disappear from the behavioral repertoire as more mature forms of thinking emerge, as in our data.

Finally, partial correlational analyses were carried out to assess the consistency between the developmental levels of a child's description, explanation and ideas about treatment or prognosis of learning disability.

Results

Age-related Changes

Insert Table 2 here

Description. The ANOVA yielded a significant main effect for age ($F = 13.56$, $df = 5$, $p < .001$. No other significant main or interaction effects were found. The mean Description score of the 12-year-old group was significantly higher than that of all other age groups. The mean

score of the 11-year-olds differed significantly from those of the 7-, 8-, and 9-year-olds but not from those of the 10- and 12-year-olds.

Explanation. A significant main effect of age on Explanation scores also emerged ($F = 17.72$, $df = 5$, $p < .001$). There were no other significant main or interaction effects. The mean Explanation scores of the 11- and 12-year-olds differed significantly from those of all other age groups but not from each other. Furthermore, the 10-year-old's mean score was significantly higher than that of the 7-year-olds.

Treatment. Age was also found to have a significant main effect on Treatment scores ($F = 9.13$, $df = 5$, $p < .001$). Other significant main or interaction effects did not appear. The mean Treatment score of the 12-year-olds did not differ significantly from that of the 11-year-olds, but it was significantly higher than that of other age groups. The mean score of the 11-year-olds was also higher than that of the 7-, 8-, and 9-year-olds, significantly so.

Prognosis. The ANOVA on Prognosis scores revealed a significant age main effect ($F = 7.15$, $df = 5$, $p < .001$). There were no other statistically significant main or interaction effects. The mean score of the 12-year-old group differed significantly from the means of all the other age groups, except the 11-year-olds. The latter had a mean score significantly greater than that of the three youngest groups, but not over the 10-year-olds.

Insert Table 3 here

To determine whether the observed ordering of levels is indeed a hierarchical progression, a z-score was initially computed to establish whether the ordering of levels obtained within each category system departed significantly from a random one. The obtained z-scores ranged

from 6.38 (Prognosis) to 11.73 (Description). All were significant beyond the .001 level of confidence. Then, an Index of Reproducibility was calculated for each category's set of scores in order to assess the degree to which the obtained pattern of scores departed from the ideal pattern, i.e., one in which no discontinuities in levels appear. For each variable, the Index of Reproducibility was .99. Finally, a P-R-E Index was obtained as a measure of scalability or utility. The results ranged from .96 for Explanation to .98 for Description, all considered highly satisfactory.

Insert Table 4 here

To examine the degree of consistency in the child's levels of understanding about description, explanation, treatment and prognosis of learning disability, a correlational analysis was performed, with age partialed out, on the scores of all four variables. All correlations among the four variables were positive, high, and statistically significant.

Sex Differences

None of the ANOVAs revealed statistically significant main or interaction effects of sex. The age changes noted in this sample hold true across sex.

Discussion

The primary purpose of this study was to investigate the development of children's conceptions of learning disability. The results indicate that age-related changes characterize children's descriptions of this psychological disorder, their explanations for it, and their ideas about its treatment and prognosis. These changes with increasing age hold true across sex and race. Furthermore, a scalogram analysis revealed that the observed sequence is a

hierarchically ordered one. It can therefore be concluded that the child's concept of learning disability undergoes a developmental progression.

With increasing age, children's descriptions and explanations as well as their ideas about the treatment and prognosis of learning disability change from being undifferentiated, incomplete, and inaccurate to being more differentiated, complete, and accurate. Thus, children appear to have an "organized knowledge system" (Forbes, 1978) in regard to the construct, learning disability. The significant positive correlations obtained between the four dimensions of the constuct (Description, Explanation, Treatment, and Prognosis) strengthen the impression that children's ideas about learning disability form an organized knowledge system.

The results of this study are consistent with those reported by Biface and Walsh (1980) concerning children's conceptions of illness. In both studies, children's conceptions of a disorder showed changes in the direction of increasing differention and abstraction. Like Babace and Walsh, we suggest that the observed changes reflect the child's increasing cognitive maturity. The absence of sex and race differences suggest that the cognitive factors may play a more critical role in the development of children's conceptions of learning disability than the first two variables. However, the influence of experience remains unknown. A study comparing the development of this concept in nonLD children and children with learning disability is needed to clarify the role of experience in this developmental process.

Reference Notes

1. Froug, K., & Jones, F. Children's perceptions of trainable mentally retarded: An experimental analysis. Unpublished study, 1973.

References

Bibace, R., & Walsh, M. E. The development of children's concepts of health and illness. Pediatrics, 1980, 66, 912-917.

Budoff, M., Siperstein, G., & Conant, S. Children's knowledge of mental retardation. Education and Training of the Mentally Retarded, 1979, 14, 277-281.

Forbes, D. Recent research on children's social cognition: A brief review. In W. Damon (Ed.), Social cognition: New directions for child development. San Francisco: Jossey-Bass, 1978.

Goodman, H., Gottlieb, J., & Harrison, R. Social acceptance of EMRs integrated into a nongraded elementary school. American Journal of Mental Deficiency, 1972, 76, 412-417.

Leik, R., & Matthews, M. A scale for developmental processes. American Sociological Review, 1968, 33, 62-75.

Piaget, J. The moral judgment of the child. London: Kegan Paul, 1965. (Originally published, 1932.)

Rosenthal, J. Self-esteem in dyslexic children. Academic Therapy, 1973, 9, 27-39.

Shantz, C. U. Social cognition: In P. Mussen (Ed.), Carmichael's manual of child psychology, (Vol. 3). Cognitive Development. (J. H. Flavell & E. Markman, Eds.). New York: Wiley, in press.

Werner, H. Comparative psychology of mental development (Science Editions, New York, 1948).

Table 1

Sample

Mean Age in Yrs.-Mos.	Sex			
	Male		Female	
	Caucasian	NonCaucasian	Caucasian	NonCaucasian
7-2	8	2	7	3
8-1	5	5	8	2
9-1	8	2	8	2
10-0	9	1	6	4
11-2	6	4	7	3
12-0	9	1	8	2

Other sample characteristics:

- "Average" intelligence as defined by standard scores of 80-120 on the California Test of Mental Maturity
- Not diagnosed as LD or any other category
- Enrolled in regular class within schools also containing LD special class
- Urban, middle class

Table 2

Children's Understanding of Learning Disability
Mean Scores and Standard Deviations

Grade	Description Mean	S.D.	Explanation Mean	S.D.	Treatment Mean	S.D.	Prognosis Mean	S.D.
6	6.65[a]	2.72	3.40[a]	.99	3.15[a]	1.50	2.65[a]	.93
5	4.20[b]	2.71	3.00[a]	1.38	2.60[ab]	1.88	2.15[ab]	1.39
4	2.35[bc]	1.76	1.70[b]	1.26	1.40[bc]	1.39	1.25[bc]	1.12
3	2.15[c]	2.08	1.20[bc]	1.11	1.15[c]	1.18	1.15[c]	1.04
2	1.35[c]	1.42	0.75[bc]	.85	.80[c]	.89	.80[c]	.89
1	1.15[c]	.93	0.40[c]	.60	.45[c]	.51	.55[c]	.57

Note: Means with the same letter are not significantly different from one another at the .05 level.

Table 3

Scalogram Analysis Results

Scale	Z-Score	Significance	Index of Reproducibility	P-R-E Measure Scalability Index
Description	11.73	.001	.99	.98
Explanation	6.81	.001	.99	.96
Treatment	6.67	.001	.99	.96
Prognosis	6.38	.001	.99	.97

Table 4

Partial Correlations between Description, Explanation, Treatment and Prognosis Scores with Age Effects Removed

	Description	Explanation	Treatment	Prognosis
Description	1.00	0.41***	0.74***	0.78***
Explanation	0.41***	1.00	0.47***	0.47***
Treatment	0.74***	0.47***	1.00	0.78***
Prognosis	0.78***	0.47***	0.78***	1.00

***$p < .001$